

## TAX REVENUE STABILITY OF REPLACING THE PROPERTY TAX WITH A SALES TAX

Recent proposals have been advanced to eliminate the property tax in Georgia. HR 900 would eliminate property taxes as well as nearly all other local taxes and replace the lost revenues of local governments with a state grant program funded by an increase in the sales tax rate and a broadening of the sales tax base.<sup>1</sup> More recently, the GREAT Plan for Georgia has called for the repeal of all property taxes in Georgia and replacing the lost revenue by broadening the sales tax base.<sup>2</sup> This policy brief discusses the implications for tax revenue stability of proposals that would replace the property tax with an increased sales tax. There are many other relevant issues that are not discussed in this brief. This is one of several policy briefs and reports that the Fiscal Research Center will prepare that address various aspects of these reform proposals.

Alternatives to the property tax are sought for various reasons. However, there are also benefits to the property tax as a revenue source, with revenue stability and flexibility being among the most important. The property tax base generally grows at a more stable rate than do the tax bases for the sales and income taxes.<sup>3</sup> However, stability in the growth of the tax base is only part of the reason property taxes are more stable than sales and income taxes. Another important reason is that property tax rates are set after the

property tax base (or digest) is determined. Greater rate flexibility means that local governments can vary millage rates to make property tax revenues more stable even if the local property tax base experiences short-term fluctuations. Rate changes for sales taxes are much less frequent and hence sales tax revenues are more likely to experience fluctuations.

To explore the relative stability of tax revenue annual revenue data were obtained for the property tax, sales tax, personal income tax, and corporate income tax in Georgia from 1970 to 2005.<sup>4</sup> Values for the property tax are combined revenues for state and local governments. Sales tax values are for state government revenues and hence exclude local sales tax revenues. In Georgia personal and corporate income taxes are only collected by the state government, so personal and corporate income tax values reported are also for state government revenues.

Revenue growth for each of the four taxes from 1970 to 2005 is graphed in Figure 1. One definition of revenue stability is revenue growth at a relatively constant rate over time. Therefore, large fluctuations in annual revenue growth imply a less stable revenue source. Figure 1 seems to indicate that corporate

income tax revenues are much less stable than the other taxes. Figure 2 provides a closer look at the growth rates for the property tax and sales tax. Overall, it appears that property tax revenues are slightly more stable than sales tax revenues, especially in more recent years. The spike in sales tax revenue growth around 1990 is at least partly attributable to an increase in the state sales tax rate from 3 percent to 4 percent. Similarly, the slow growth of sales tax revenue in 1997 and 1998 is at least partly attributable to the gradual elimination of the sales tax on food for home consumption during that time. However, we must also remember that the tax rates for the property tax as well as the definition of the property tax base changed over time as well. The recent negative growth of sales tax revenues in 2002 and 2004 cannot be explained by a changing of the base or rate but is instead likely attributable to the economic downturn experienced in those years.

Property tax revenues grew at an average annual rate of 8.38 percent while sales tax revenues grew slightly slower at an average rate of 7.89 percent (Table 1). Personal income tax revenues grew the fastest at a rate of 10.47 percent and corporate income tax revenues grew the slowest at a rate of 5.95 percent.

The variability of the tax revenue sources can be illustrated by graphing the absolute deviation from the average annual revenue growth. For each year this is calculated as the absolute difference between the actual growth rate and the average annual growth rate. If the growth rate was the same every year, the deviation would be zero. The larger the differences over time in the annual growth rates, the larger is the deviation. Since deviations are in absolute value terms, higher values imply a less stable revenue source.

Figure 3 shows a plot of the annual deviations for the property tax and sales tax. As in Figures 1 and 2, it appears that the property tax is somewhat more stable than the sales tax, especially in recent years.

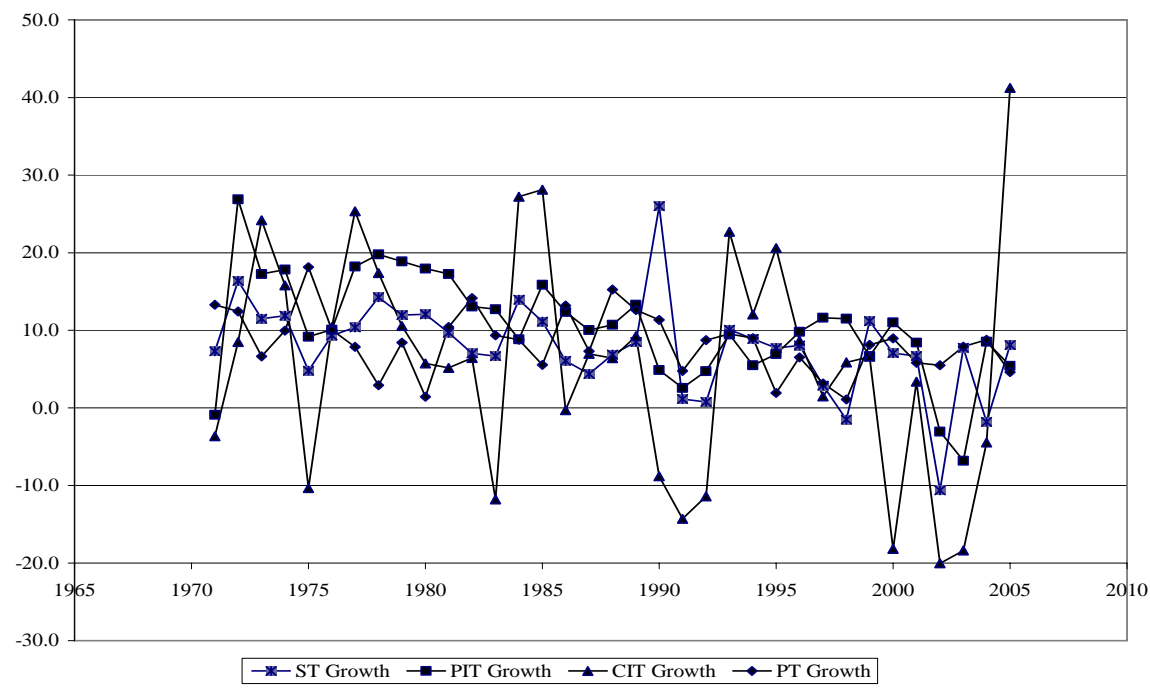
One way to summarize the information in Figure 3 is to compute the average absolute deviation. Table 1 reports the average absolute deviation from the mean growth rate for the four tax revenues sources. The property tax has the lowest average absolute deviation at 3.04 percent followed by the sales tax at 4.06 percent, the personal income tax at 5.04 percent, and the corporate income tax at 11.16 percent. This analysis again suggests that the property tax is the most stable of the four revenue sources.

It may also be helpful to compute the average absolute deviation for the sales tax excluding the years in which the rate or base was changed. Fiscal years 1989 and 1990 were affected by a rate increase and 1997, 1998, and 1999 were affected by a gradual elimination of food for home consumption from the sales tax base. Excluding these five years yields an average annual growth rate for the sales tax of 7.64 percent and an average absolute deviation of 3.54 percent. Excluding the five years reduces the average absolute deviation for the sales tax but it is still higher than that for the property tax. Table 1 also reports the average absolute deviation for the property tax excluding the same five years as above. The value of 2.86 percent is less than the average absolute deviation of the sales tax for the same non-excluded years. This suggests that the property tax is still more stable than the sales tax even when we omit years that experience a change in the sales tax rate or base.

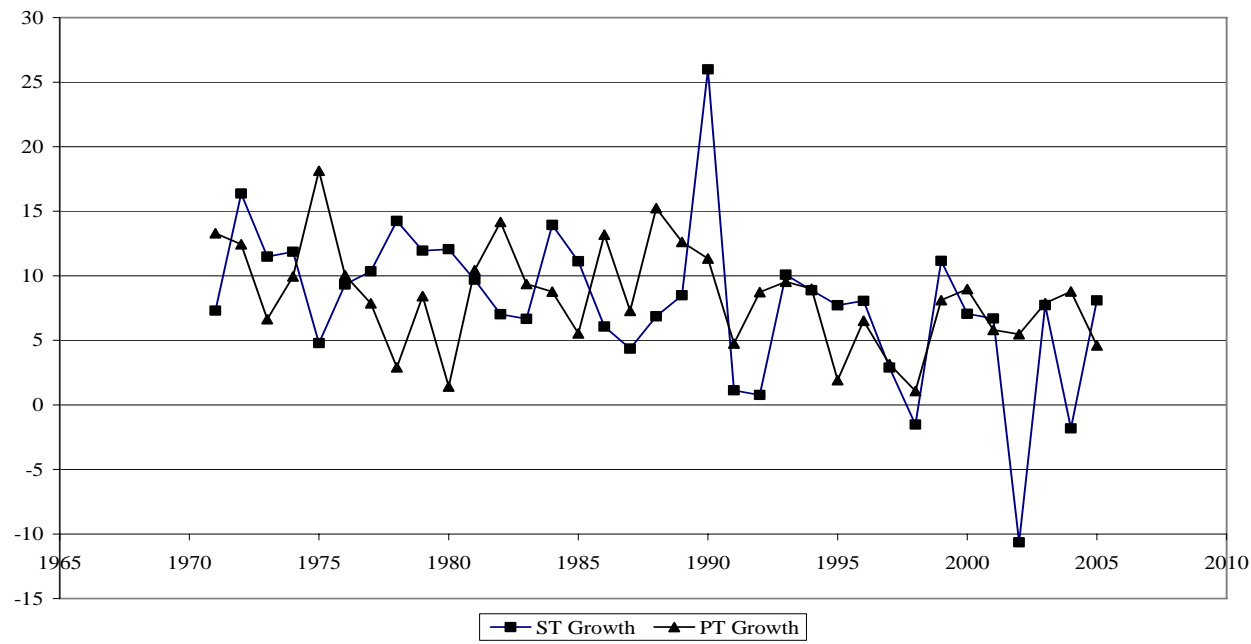
One last way to examine the implications for revenue stability of replacing the property tax with a sales tax is to compare the growth of the sum of property tax revenues and sales tax revenues to the growth of a hypothetical expanded sales tax. The expanded sales tax represents sales tax revenues that would have occurred if there were no property tax but instead the sales tax rate was increased, beginning in 1970, to the tax rate that would yield the same amount of revenues over the whole period as the actual sum of the revenue from the sales tax and property tax. Of course, this means that the hypothetical expanded sales tax would have annual growth equal to that of the actual sales tax. The average growth and average absolute deviation would also be the same as the actual sales tax.

At the bottom of Table 1, we see that the sum of property and sales tax revenues grew at an average annual rate of 8.18 percent with an average absolute deviation of 2.77 percent. Interestingly, the sum of property and sales tax revenues has an average absolute deviation lower than both the property tax and sales tax individually. The implication is that replacing the property tax with an expanded sales tax would likely decrease tax revenue stability for two reasons. First, property tax revenues tend to be more stable than sales tax revenues as discussed above. Second, there appears to be a benefit from diversification. Combining two revenue sources can often be more stable than either of the revenue sources individually if the revenue sources have relatively similar stability.<sup>5</sup> The reason is that the deviation of one revenue source from its mean can partially be offset by the other revenue source in some years. For both of these reasons, it appears that replacing the property tax with an expanded sales tax would decrease revenue stability.

**FIGURE 1. ANNUAL GROWTH RATES**



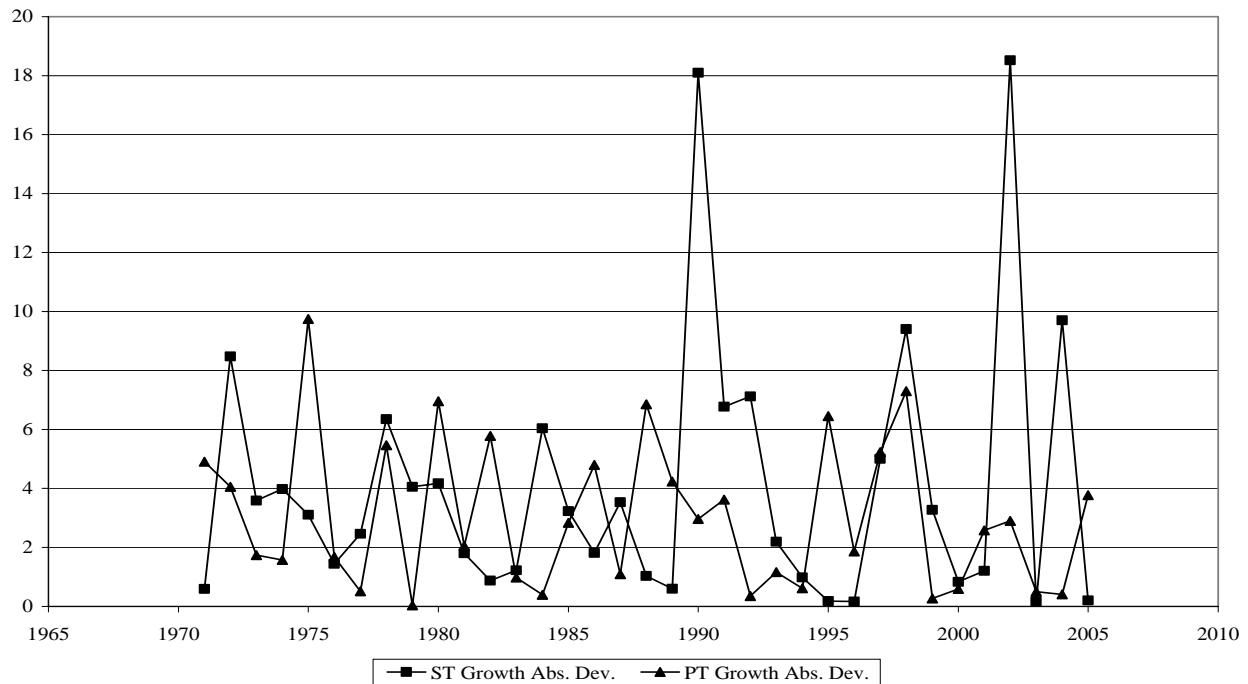
**FIGURE 2. GROWTH RATES FOR SALES TAX AND PROPERTY TAX REVENUES**



**TABLE 1: AVERAGE TAX REVENUE GROWTH AND AVERAGE ABSOLUTE DEVIATION**

	Average Growth	Average Absolute Deviation
Property Tax	8.38	3.04
Sales Tax	7.89	4.06
Personal Income Tax	10.47	5.04
Corporate Income Tax	5.95	11.16
Property Tax#	8.57	2.86
Sales Tax#	7.64	3.54
Property + Sales Tax	8.18	2.77
Expanded Sales Tax	7.89	4.06

#indicates the statistics are computed excluding the years 1989, 1990, 1997, 1998, and 1999.

**FIGURE 3. ABSOLUTE DEVIATION FROM THE MEAN GROWTH RATE FOR SALES AND PROPERTY TAXES**

This policy brief suggests that eliminating the property tax and replacing it with a sales tax would likely make total tax revenues less stable than would be the case under the status quo. The implication is that any proposal to replace the property tax with a sales tax should include a plan to deal with future revenue fluctuations. It should be noted that the analysis is based on the existing sales tax base. Removing exemptions and adding services would likely change the stability of the sales tax base in ways that are unknown.

## Notes

1. For a discussion of the provisions of HR 900, see Sjoquist (2007).
2. The GREAT Plan can be found online at <http://www.thegreatplanforgeorgia.com/>.
3. Matthews (2005) discusses the issues of tax revenue volatility from replacing the portion of the property tax used to finance K-12 education with a sales tax. In that brief, Matthews examines how the tax bases for the sales tax, property tax, and income tax have grown over time. In this brief, however, we look at the stability of tax revenues without adjusting for changes in rates.
4. Property tax values come from the Census Bureau. Sales and income tax values come from the Georgia Department of Revenue Statistical Reports.
5. For example, if the growth of two hypothetical revenue sources have the same mean and average absolute deviation, the average absolute deviation of the revenue sources combined will always be less than or equal to that of the revenue sources individually.

## References

- Matthews, John. (2005). "Tax Revenue Volatility and a State-Wide Education Sales Tax." FRC Policy Brief #109. Atlanta, GA: Fiscal Research Center, Andrew Young School of Policy Studies, Georgia State University.
- Sjoquist, David L. (2007). "A Description of the Proposed Comprehensive Revision of Georgia's Tax Structure: HR 900." FRC Policy Brief #151. Atlanta, GA: Fiscal Research Center, Andrew Young School of Policy Studies, Georgia State University.

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